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## & E J U P S J B M

# LTE Technology: Antenna, RF Front-Ends, and Channel Modeling

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Dimitrios Sounas,<sup>4</sup> and Nima Chamanara<sup>5</sup>

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\$PSSFTQPOEFODFTIPVME CF BEESFTTTE UP 2JOHGF0H;IBOH [IBOH RG!  
3FDFJWFE +VOF "DDFQUFE +VOF  
\$PQZSJHIU <sup>a</sup> 2JOHGF0H;IBOH DFTTBSUJDMFEJTUSJCVUFE VIDE  
XIJDIQFSNJUT VOSFTUSJDUFE VTRO EQBOSJNCEWJPNQ BSEFVSJFQFSEPLEVFDLSJPH.

.PCJMF DPNNVOJDBUJJPOTBSFNPSF BGE\*NP8DU0VFOBVOFFSJCZP:V8IJFU  
EBJMZ MURFHUFSNFWPMVUJPO -5& DRNBOEB\$E\*JTBSPURFSPBI PSEFS I  
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NPTUSFDFOUBEWBODFTJO-5&UFDIBOMPHOZBQBQMS/EZOH\$JIFOGSEROUFU  
FOE DPNQPOFOUEFTJHOBOEDIBOOFWVFMETFMJNOMBUEDOORCBF%BDUJ  
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\*OUFSOBUJPOBM +PVSOBM P

FYBNQMF BOUFOOBOEENQMF S E J W J E F S T H S F B U M Z  
SFEVDFT UIFTJ[FBOE NFB O X I J M F F O I B O D F T U I F Q F S G P S N B O D F P G  
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. P S F P W F S U I J T D P M M F D U J P O J O D M V E F T U X P Q B Q F S T P O D I B O O F M  
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D P N N V O J D B U Q B Q F S C Z + ' . P O T F S S B U F U B M Q S F T F O U T  
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T D F O B S J P T F Y I J C F U X F F O U S S B M F N B O E J N Q M F  
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P V U B O J O U F S F T U J O H T U V E Z P O U I F J O U F S G F S F O D F Q S P C M F N P G U I F  
- 5 & T Z T U F N V O E F S S B E B S J O U F S G F S F O D F D J S D V N T U B O D F  
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C F U X F F O U I F S B E B S B O E - 5 & T Z T U F N B O E T V C T F R V F O U M Z Q S P Q P T F  
B T D I F N F U P H F U S J E P G U I F S B E B S J O U F S G F S F O D F

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BOPOZNPVT SFWJFXFST GPS UIFJS DPOUSJCVUJPOT UP UIJT TQFDJBN  
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2JOHGFOH ;IBOH  
4BJ 8BJ 8POH  
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9JV :JO ;IBOH  
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